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# SURVEY OF INDIA

## MAP PUBLICATION AND OFFICE WORK

1925 TO 26



From 1st April 1925  
To 31st March 1926.

PUBLISHED BY ORDER OF  
Colonel C. P. GUNTER, O.B.E., R.E.,  
Offg. SURVEYOR GENERAL OF INDIA.



Printed at the Photo.-Litho. Office,  
Survey of India,  
CALCUTTA,  
1926.



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## **LIST OF PROVINCES AND STATES IN EACH CIRCLE.**

**Director, Frontier Circle**, headquarters Simla, (telegrams "Surfrontier")—N.W. Frontier Province, Baluchistān, Kashmir, Punjab, Punjab States, Delhi, Bikaner and States of Western Rājputāna, Sind and Cutch.

**Director, Central Circle**, headquarters Mussoorie, (telegrams "Surcent")—United Provinces, Central Provinces, Central India Agency, Gwalior State, Baroda State, Ajmer and Eastern Rājputāna, Northern Division Bombay Presidency, States of Western India (less Cutch).

**Director, Southern Circle**, headquarters Bangalore, (telegrams "Sursouth")—Bombay Presidency (less Northern Division and Sind), Hyderābād and Mysore States, Coorg, Madras Presidency and Madras States.

**Director, Eastern Circle**, headquarters Shillong, (telegrams "Sureast")—Bihār and Orissa, Bengal Presidency, Assam and Sikkim.

**Director, Burma Circle**, headquarters Maymyo, (telegrams "Surburma")—Burma, the Andaman and Nicobar Islands.



## HOW WE CAN HELP YOU.

**Surveys** of every kind can be carried out for private firms as well as for all Government Departments on application to the following Survey Directors:—

The Director, Frontier Circle, Survey of India,  
Simla. (*Telegrams "Surfrontier"*).

The Director, Central Circle, Survey of India,  
Mussoorie. (*Telegrams "Surcent"*).

The Director, Southern Circle, Survey of India,  
Bangalore. (*Telegrams "Sursouth"*).

The Director, Eastern Circle, Survey of India,  
Shillong. (*Telegrams "Sureast"*).

The Director, Burma Circle, Survey of India,  
Maymyo. (*Telegrams "Surburma"*).

**Triangulation, Levelling, Cantonment Surveys, Tide Tables.** Advice in regard to these, and on scientific questions, is obtainable from the *Director, Geodetic Branch*, Survey of India, Dehra Dūn, who also undertakes a good deal of levelling and similar work on payment. (*Telegrams "Surtrig"*).

**Maps and Illustrations** can be printed by the *Director, Map Publication*, Survey of India, 13 Wood Street, Calcutta, for government departments only, and special maps can also sometimes be prepared, on payment. (*Telegrams "Surpub"*).

**The Mathematical Instrument Office**, Survey of India, 15 Wood Street, Calcutta, supplies and repairs all kinds of optical and surveying instruments, and takes back surplus instruments, on valuation, from all government departments, whether Imperial or Provincial. (*Telegrams "Surinst"*).

**General enquiries** should be addressed to the Assistant Surveyor General, 13, Wood Street, Calcutta, (*Telegrams "Suroffice"*), as the Surveyor General of India (*Telegrams "Surveys"*) is on tour during most of the year.

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## HOW TO OBTAIN MAPS AND OTHER SURVEY PUBLICATIONS.

**Maps.** The Map Record and Issue Office, Survey of India, 13 Wood Street, Calcutta, (*Telegrams "Surmaps"*) can supply maps, on a great variety of scales, for all parts of India and most of Southern Asia. These are also obtainable to some extent, from the Agents detailed on page v and from the Directors of Circles detailed in the notice on page ii.

**A Catalogue of Maps**, showing Survey of India maps available for all Southern Asia, and itself forming a useful atlas of the Indian Empire, is obtainable from the above, at the cost of *One Rupee only*.

**Forest Maps** are obtainable only from the Forest Map Office, Survey of India, Dehra Dūn. (*Telegrams "Surforest"*).

**Geological Maps** are obtainable from the Director, Geological Survey of India, Calcutta.

**Publications.** An abstract of professional publications, other than maps, is given overleaf, and a complete list of these is obtainable *gratis*, from the Director, Geodetic Branch, Survey of India, Dehra Dūn. (*Telegrams "Surtrig"*).

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## ABSTRACT OF PUBLICATIONS.

**Survey of India Publications** other than maps may be divided into—

- (A) Historical and General Reports
- (B) Geodetic works of reference
- (C) Catalogues, Instructional handbooks, etc
- (D) Miscellaneous papers.

**Historical and General Reports** include the Memoirs by Sir Clements Markham and by C. E. D. Black, the Annual General Reports, Narrative Reports. Records Volumes, etc.

**Geodetic works of reference** comprise Everest's Great Arc Books, the G. T. S. Volumes, Triangulation and Levelling Pamphlets. and Tide Tables for various ports between Suez and Singapore.

The G. T. S. Volumes form a series of nineteen volumes, describing in detail the various operations of the Great Trigonometrical Survey. Detailed accounts are given of Base-line measurements, of the reduction of Principal Triangulation with each main figure treated separately. of Telegraphic Longitude and Astronomical Latitude operations and of Levelling of high precision.

**Catalogues, Instructional handbooks, etc.,** comprise Departmental Orders, Catalogues and Lists, Tables and Star Charts, Manuals, Handbooks, etc.

**Miscellaneous papers** include various unclassified papers on Geography, Geodesy, Exploration, etc., and other professional and departmental papers and forms.

A complete catalogue of all the above may be had gratis on application to the Director, Geodetic Branch, Survey of India, Dehra Dūn.

# AGENTS FOR THE SALE OF INDIAN OFFICIAL PUBLICATIONS.

## London.

- A. CONSTABLE & Co., 10, Orange Street,  
Leicester Square, W.C.  
P. S. KING & SON, 2 and 4, Great Smith  
Street, Westminster, S.W.  
KEGAN PAUL, TRENCH, TRÜBNER & Co.,  
68, Carter Lane, E.C.  
B. QUARITCH, 11, Grafton Street, New  
Bond Street, W.  
HENRY S. KING & Co., 65, Cornhill, E.C.  
GRINDLAY & Co., 54, Parliament Street,  
S.W.  
T. FISHER UNWIN, LTD., 1, Adelphi Terrace,  
W.C.  
W. THACKER & Co., 2, Creed Lane,  
Ludgate Hill, E.C.  
LUZAC & Co., 46, Great Russell Street, W.C.

## Edinburgh.

OLIVER AND BOYD, Tweeddale Court.

## Dublin.

E. PONSONBY, LTD., 116, Grafton Street.

## Oxford.

B. H. BLACKWELL, 50 and 51, Broad Street.

## Cambridge.

DEIGHTON, BELL & Co., LTD., Trinity Street

## ON THE CONTINENT.

- ERNEST LEROUX, Rue Bonaparte.  
Paris - France.  
MARTINUS NIJHOFF, The Hague - Holland.  
OTTO HARRASSOWITZ, Leipzig }  
FRIEDLÄNDER & SOHN, Berlin } Germany.

## FOR MAPS ONLY.

### London.

EDWARD STANFORD, LTD., 12-14, Long Acre.  
W.C.  
SECRETARY TO THE HIGH COMMISSIONER  
FOR INDIA, (GENERAL DEPARTMENT),  
42, Grosvenor Gardens, S.W.1.

## FOR MAPS ONLY.

### India.

DELHI.

OXFORD BOOK AND STATIONERY Co.,  
Kashmir Gate.

SIMLA.

THACKER, SPINK & Co.

CALCUTTA.

THACKER, SPINK & Co., 3 Esplanade East.

NEWMAN & Co., 3 Old Court House Street.

BOMBAY.

THACKER & Co., LTD.

D. B. TABAPOREVALA SONS & Co.

MADRAS.

HIGGINBOTHAMS, LTD.

RANGOON.

THE CURATOR, GOVT. BOOK DEPÔT, BURMA.

LAHORE.

THE PUNJAB RELIGIOUS BOOK SOCIETY.

PESHĀWAR.

NORTHERN INDIA BOOK DEPÔT.

MEERUT.

OXFORD BOOK AND STATIONERY Co.

AJMER.

SCOTTISH MISSION INDUSTRIES.

KASHMIR.

COCKBURN AGENCY, Srinagar.

BECKETT & Co., „

MUZAFFARPUR.

BURMAN & Co.

### America.

G. S. HAMMOND & Co., 30 Church St.  
Hudson Terminal N. York.

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## MAP PUBLICATION REPORT.

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1. Modern publications, scales 1 inch and  $\frac{1}{2}$  inch = 1 mile
2. „ „ scales  $\frac{1}{4}$  inch and  $\frac{1}{8}$  inch = 1 mile.
3. Index to sheets of the India and Adjacent Countries Series, on the scale of 1:1,000,000 or 1'014 inches to 16 miles.
4. Index to sheets of the Carte Internationale du Monde on the scale of 1:1,000,000.
5. Index to sheets of the Southern Asia Series on the scale of 1:2,000,000.



# MAP PUBLICATION AND OFFICE WORK

FOR THE YEAR

1st April 1925  
to  
31st March 1926.

## I.—INTRODUCTION AND PERSONNEL.

1. **Annual Reports.**—Annual reports are now arranged in three separate volumes as follows:—

*General Report,*

*Geodetic Report,*

*Map Publication and Office Work Report.*

The *General Report* gives a full description of all ordinary survey operations, and only includes bare abstracts of the Geodetic and Map Publication Reports. The General Report and the Geodetic Report are for the survey year ending 30th of September, whereas the Map Publication Report corresponds with the financial year, which is for several reasons more suitable for these office reports.

2. **The present report.**—The indexes form the most important part of this report, as they show the progress of publication to date for all standard series of modern maps, excluding trans-frontier work. Old maps on various scales are available for the whole of India, but some are very old and sketchy. All maps previous to 1905 were published in old style and are based on the longitude determined in 1815, which was about 2 miles out of position; they are therefore excluded from the indexes, though duly shown in the map catalogues.

3. **Letterpress.** Apart from (I), the introduction, and (V), the annual report of the Mathematical Instrument Office at the end of the volume, the present report is divided into three main parts:—

(II) Shows all publications and issues of the Department for the year.

(III) Shows all the fair-drawing, whether completed for publication or still in hand, carried out by the various drawing offices and field parties.

(IV) Describes the work of the printing and miscellaneous offices, excluding that of the Computing and Tidal Party, whose work is of a geodetic character and published in full in the annual Geodetic Report.

**4. Personnel.** As the above operations are more clearly shown by grouping them under these three main heads, it has been necessary to ignore in some respects the existing organization of some of the offices. Thus the copper-plate printing section is under the control of the Officer in charge of No. 1 Drawing Office, though, under this system of grouping, its work must obviously be reported as part of the printing operations, and not under the head of drawing offices.

As therefore it is sometimes impossible to show the organization and names of the personnel in the body of the report, they have all been included in the following list, which also serves to show all the units whose work is included in the present report.

**Calcutta.** Director, Map Publication.--Col H Wood, R.E.

*Chief Draftsman* - Mr. E. B. West.

***Officer-in-Charge, Map Record and Issue Office.***

*Class I Officers.*

Captain H. R. C. Meade, I.A., up to 19-9-25.  
Major C. G. Lewis, R.E., from 19-9-25 to 3-10-25  
Lieutenant D. R. Crone, R.E., from 3-10-25 to 26-11-25.  
Captain O. Slater, M.C., R.E., from 26-11-25.

***Mathematical Instrument Office.***

Mr. S. Woodhouse, in charge.  
„ R. C. Malcolm, *Works Manager*.  
„ A. Lacamp, *Assistant Works Manager*.

***Photo-Litho. Office.***

*Class I Officer.*

Captain T. M. M. Penney, R.E.

*Managers.*

Mr. S. Colquhoun.  
„ C. F. Oddy, leave from 12-11-25.  
„ F. R. Vandyke, (*Asstt.*). Officiating Manager from 12-11-25.  
Mr. J. Chorlton, (*Asstt.*).

***No. 1 Drawing Office.***

*Class I Officer.*

Mr. Pramadarajan Ray, R.S., in charge

*Class II Officers.*

Mr. Abinash Chandra Bose  
„ Priya Nath Sur  
„ Amar Krishna Mitra  
„ Munshi Lal, B.A.  
„ H. T. Hughes (up to 7-10-25).  
„ Prafulla Chandra Mitra, B.A.  
Captain C. B. Sexton (from 5-10-25).  
Mr. Moquimuddin, B.A.  
„ Dharendra Nath Banerjee, L.C.E., (from 4-5-25).

*Upper Subordinate Service.*

Mr. Jagdeesh Prasad Vastav (from 22-6-25 to 25-7-25).  
Mr. Charu Chandra Biswas



**Dehra Dūn. Director, Geodetic Branch.—**

Lt.-Col. R. H. Thomas, D.S.O., R.E., to 27-11-1925.

„ M. O. C. Tandy, D.S.O., O.B.E., R.E., from 28-11-25.

***No. 2 Drawing Office and Forest Map Office.***

*Class I Officers.*

Major W. E. Perry, M.C., R.E., in charge to 9-2-26.

Mr. H. W. Biggie, in charge from 10-2-26.

*Class II Officers.*

Mr. H. P. D. Morton, to 24-6-25.

„ Rama Prasad Ray, B. A.

„ C. West, from 25-6-25.

„ A. B. Hunter.

„ T. F. Kitchen, from 8-12-25.

„ H. T. Hughes, from 8-10-25.

„ Namak Chand Puri, B.A., R.S., to 31-8-25.

*Upper Subordinate Service.*

2 Officers.

**Mussoorie.**

**Director, Central Circle.—**

Lt.-Col. L. C. Thuillier, I. A., to 2-11-25.

Major V. R. Cotter, I.A., from 3-11-25 to 27-11-25.

Lt.-Col. R. H. Thomas, D.S.O. R.E., from 28-11-25 to 9-3-26.

Lt.-Col. R. H. Phillimore, D.S.O., R.E., from 10-3-26.

***Assistant Director.*—**

Major V. R. Cotter, I.A., from 16-4-25 to 2-11-25 and again from 28-11-25.

***No. 3 Drawing Office.***

*Class I Officer.*

Mr. J. A. Freeman, in charge to 23-7-25.

*Class II Officers.*

Mr. H. P. D. Morton, in charge from 21-7-25.

„ J. C. C. Lears, from 13-3-25 to 17-5-25.

„ L. Williams, M. B. E.

„ A. A. Graham, to 30-9-25.

„ F. B. Kitchen, from 1-10-25.

*Upper Subordinate Service.*

3 Officers.

**Bangalore.**

**Director, Southern Circle.—**

Lt.-Col. G. A. Beazeley, D.S.O., R.E., up to 11-5-25.

Lt.-Col. M. O. C. Tandy, D.S.O., O.B.E., R.E., from 12-5-25 to 15-11-25.

Lt.-Col. L. C. Thuillier, I.A., from 16-11-25.

***No. 4 Drawing Office.***

*Class I Officers.*

Mr. J. O'B. Donaghey, up to 6-4-25, and from 7-8-25.

Mr. E. A. Meyer, from 7-4-25 to 6-8-25.

*Class II Officers.*

Mr. E. Claudius.

„ M. S. Ganesa Aiyar up to 2-11-25.

*Upper Subordinate Service.*

5 Officers.

***No. 16 Party (Publication and Stores).***

*Class I Officers.*

Captain W. J. Norman, M.C., R.E., in charge to 11-9-25.

Lient. J. B. P. Angwin, R.E., in charge from 12-9-25 to 20-10-25.

Major F. B. Scott, I. A., in charge from 21-10-25.

*Photo-Zinc Section.*

Mr. A. Francis.

*Letterpress Printing Section.*

Mr. Shyam Narayan, B.Sc.

*Stores and Workshops Section.*

*Upper Subordinate Service.*

Mr. K. K. Das, B.A., in charge to 30-9-25.

*Class II Officer.*

Mr. Raj Bahadur Mathur, B.A., in charge from 1-10-25 to 31-12-25.

*Lower Subordinate Service.*

Computer Frederick Kerr in charge from 1-1-26.

**Simla.**

**Director, Frontier Circle.**

Lt.-Col. C. P. Gunter, O.B.E., R.E., from 1-10-25 to 14-3-26.

Lt.-Col. R. H. Thomas, D.S.O., R.E., from 15-3-26.

***No. 6 Drawing Office.***

*Class I Officer.*

Major K. Mason, M.C., R.E., in charge.

**SURVEY SECTION.**

*Class II Officers.*

Mr. F. H. Grant.

„ H. H. P. Butterfield.

2 Clerks.

15 Draftsmen.

**ARMY SECTION.**

*Head Draftsman*—Lient. W. Smith, M. B. E.,

3 European Draftsmen.

3 Printers.

**Shillong.**

**Director, Eastern Circle—**

Lt.-Col. A. A. McHarg, D.S.O., R.E.

***No. 5 Drawing Office.***

*Class I Officer.*

Mr. W. M. Gorman, in charge.

*Class II Officer.*

Mr. E. J. Biggie.

*Upper Subordinate Service.*

1 Officer.

**Maymyo.****Director, Burma Circle.—**

Lt.-Col. E. T. Rich, C.I.E., R.E.

***No. 7 Drawing Office.****Class I Officer.*

Mr. W. G. Jarbo, in charge.

*Upper Subordinate Service.*

Mr. Ghulam Hasan.

,, Bansi Ram.

,, A. K. Sen Gupta.

*Lower Subordinate Service.*

17 Draftsmen.

**Shillong—(contd.)*****Ten Mile Mapping Section  
(No. 12 Party).****Class I Officers.*

Lieut. G. F. Heaney, R.E., from 27-5-25, in charge from 11-10-25 to 22-10-25.

Major F. J. M. King, R.E., in charge from 23-10-25.

*Class II Officers.*

Major J. H. Williams, in charge to 10-10-25.

Mr. G. J. S. Rae, from 17-7-25 to 22-11-25.

,, E. M. Kenny, from 15-9-25.

,, R. C. Hanson, to 14-9-25.

Captain J. O'C. Fitzpatrick, to 4-10-25.

*Upper Subordinate Service.*

1 Officer.

## II.—PUBLICATIONS AND ISSUES.

5. **Publications.**—The publications of the Department for the year are shown in the following 3 tables, of which Table I shows map publications, Table II letterpress publications, and Table III an abstract of the publication of modern topographical maps to date.

Table I (a)—Maps published at Calcutta, during the year 1925-26.

Class of maps.	Scale.	NUMBER OF DIFFERENT MAPS OF EACH CLASS RECEIVED.		Number of sheets printed.	Value.
		New publica- tions.	New editions and reprints.		
GENERAL MAPS.		Departmental.			Rs.
Maps of India ... ..	Various	...	6	8,750	9,021
GEOGRAPHICAL MAPS.					
Map of India ... ..	1"=32miles	...	...	...	...
Southern Asia series ...	1:2,000,000	...	1	250	750
India and Adjacent Countries series.	1:1,000,000	5	25	11,835	19,004
La Carte Internationale du Monde.	1:1,000,000	...	1	350	350
TOPOGRAPHICAL MAPS.					
Quarter inch, (Modern) <sup>1</sup> ...	1"=4 miles	24	47	28,640	48,756
Do. (Prely.) ... ..	1"=4 miles	3	6	2,500	4,040
Do. (Provl.) ... ..	1"=4 miles	...	51	12,340	18,280
Half inch, (Modern) <sup>1</sup> ...	1"=2 miles	69	28	37,265	1,12,978
Do. (Prely.) ... ..	1"=2 miles	...	...	...	...
Do. (Provl.) ... ..	1"=2 miles	2	...	400	500
One inch, (Modern) <sup>1</sup> ...	1"=1 mile	127	169	195,795	825,386
Do. (Prely.) ... ..	1"=1 mile	7	5	4,210	6,361
Do. (Provl.) ... ..	1"=1 mile	...	...	...	...
Old style sheets ... ..	Various	...	26	3,375	5,643
SPECIAL MAPS.					
District maps ... ..	1"=4 miles	...	...	...	...
Administration report maps ...	1"=8 miles	...	3	275	102
Provincial maps ... ..	Various	3	4	5,475	17,269
Plans of Cities and Cantonments	Various	1	1	1,050	3,000
Index maps ... ..	Various	1	1	650	318
Miscellaneous maps ... ..	Various	50	36	47,064	17,915
Total ... ..	...	292	410	360,224	5,84,668
		Extra-departmental.			
Maps ... ..	Various	145	52	175,676	38,370
Plans and diagrams ... ..	Various	317	12	141,026	13,249
Illustrations ... ..	.....	162	1	57,719	13,149
Miscellaneous ... ..	.....	102	32	299,793	16,410
Total ... ..	...	726	97	674,214	81,178
Grand Total ... ..	.....	1,018	507	1,034,438	6,65,846

Table I (b)—Maps published at Dehra Dūn.

Class of maps.	Scale.	New publica- tions.	Reprints and new editions.	Number of sheets printed.	Value.
<i>Departmental.</i>					<i>Rs.   as.   p.</i>
Cantonment maps ...	Various	44	62	14,674	29,348 0 0
Forest maps ...	„	57	46	10,623	12,656 4 0
Miscellaneous ...	„	9	2	4,767	3,231 13 3
<b>Total ...</b>	<b>...</b>	<b>110</b>	<b>110</b>	<b>30,064</b>	<b>45,236 1 3</b>
<i>Extra-departmental.</i>					
Maps ...	Various	565	21	170,147	25,748 9 8
Plans & diagrams ...	„	43	...	30,119	1,368 1 0
Charts ...	4" = 1 mile	324	...	116,125	9,110 1 0
<b>Total ...</b>	<b>...</b>	<b>932</b>	<b>21</b>	<b>316,391</b>	<b>36,226 11 8</b>
<b>Grand Total ...</b>	<b>...</b>	<b>1,042</b>	<b>131</b>	<b>346,455</b>	<b>81,462 12 11</b>

## Notes.

6. *Calcutta*.—Map publication was considerably delayed by the heavy work of surprinting minute meshes for the Army Department on a very large number of maps already published. As these maps were trimmed and also in many cases folded, the surprinting could only be effected in hand-presses, and registration was difficult and often imperfect. This work left insufficient hand-presses for ordinary proof work.

7. *Dehra Dūn*.—In addition to the work shown in Table I(b) above, 66,063 prints of 972 originals, consisting of plane-table sections, triangulation charts and pamphlets, and forest maps were printed free of charge.

In June 1925, the outturn of negatives reached a record of 287 negatives, and in October 1925, the outturn of the printing machines reached a record of 55,764 prints, representing 86,186 pulls.

Table II.—Letterpress publications.

## (a) PUBLISHED AT CALCUTTA.

1. Survey of India General Report, 1924-25. Price Re. 1 or 1s. 9d. (475 copies).
2. Survey of India Map Publication and Office Work Report, 1924-25. Price Re. 1 or 1s. 9d. (475 copies).
3. Confidential Supplement to the Survey of India General Report, 1923-24.
4. Confidential Supplement to the Survey of India General Report, 1924-25.
5. Government of India Orders Nos. 814 to 819.
6. Survey Notes—from February 1925 to February 1926 (350 copies for each month).
7. Circular Order No. 293, reprint (300 copies).
8. Booklet for Conventional Signs for use on P. T. Sections (1,000 copies).
9. Catalogue of Maps, Confidential (150 copies).
10. Sections 1 to 4 of the Hand-book of Topography, Chapter VIII (600 copies).
11. Correction No. 28, to the Hand-book of Topography, Chapter I, 1921 (600 copies).
12. Correction No. 2, to the Hand-book of Topography, Chapter II, 1923 (600 copies).
13. Corrections Nos. 1 and 2, to the Hand-book of Topography, Chapter IV, 1924 (600 copies each).
14. Corrections Nos. 134 to 138, 141, 142, 144, 145 and 146, to the Hand-book of Topography, Chapter VI, 1922 (650 copies each).
15. Corrections Nos. 16, 17 and 19 to the Hand-book of Topography, Chapter X, 1919 (600 copies each).
16. Corrections No. 14, to Border Specimen for Topographical Maps, January 1920, (1,000 copies).
17. Corrections Nos. 15 & 16, to Type-Table for Topographical Maps, December 1920, (1,000 copies each).
18. List of published maps for record in the office of the High Commissioner for India, General Department, Record Branch, London and for sale to the public for the quarters ending 31st December 1924, 31st March, 30th June, 30th September and 31st December 1925 (50 copies for each quarter).
19. List of published maps, "For Official Use Only", for record in the office of the High Commissioner for India, General Department, Record Branch, London and not for sale to the public for the quarters ending 31st December 1924, 31st March, 30th June, 30th September and 31st December 1925 (10 copies for each quarter).
20. Map publication lists—From February 1925, to February 1926 (800 copies each month).
21. Instructions for applicants for appointment as Class II officers (300 copies).
22. Rules to be observed in the examination of candidates for the Class II service of the Survey of India (200 copies).
23. Rules for the guidance of officers conducting the Class II service examination (100 copies).
24. Appendices, tables on title-pages etc., for the Memorandum by the Surveyor General on the pay of Class II officers (200 copies).
25. Rules for the appointment of store keepers in field parties (200 copies).
26. Addenda and corrigenda to regulations on the subject of Language Examinations etc. 10th and 11th lists of corrections (400 copies each).
27. Calendar for 1926 (3,000 copies).

Table II (a)—(Concl'd.).

28. Rules and regulations of the M. I. O. (5,000 copies).
29. Account rules of the M. I. O. (80 copies).
30. Annual indent for D. O. (15 copies).
31. Annual indent for E. O. (15 copies).
32. Photo.-Litho. Office annual indent (15 copies).
38. M. I. O. annual indent and supplementary indent (15 copies each).

## (b) In Hand at Calcutta.

1. *Government of India Orders—Re changes in nomenclature of Class I officers.*
2. *Government of India Orders—Re date from which sanctions accorded by the Secretary of State in Council should take effect.*
3. *Hand-book of Topography, Chapter V.*
4.       "               "               "       VIII (from Section V).
5.       "               "               "       XI.
6. *Correction Nos. 163 to 178, to the Hand-book of Topography, Chapter VI (1922).*
7. *Correction No. 17, to Type Table for Topographical Maps (1920).*
8. *List of names for the Simla Guide Map.*
9. *List of names for the Bangalore Guide Map.*
10. *P. L. O. annual indent.*

## (c) PUBLISHED AT DEHRA DŪN.

1. Records of the Survey of India, Vol. XX. The War Record 1914—20 (720 copies).
2. Hand-book of Topography Chapter IX (660 copies).
3. 13 Triangulation Pamphlets and Addenda to 1/M sheet 61 (1,400 copies).
4. Additional tables (Traverse) to Auxilliary Tables Part III (500 copies).
5. Tide Tables for Indian ports for 1926 (5,190 copies).
6. New data for Levelling Pamphlets, 53, 57, 79 (650 copies).
7. Additions and corrections No 2, to Routes in the Western Himālaya, Kashmīr &c. Vol. 1 of January 1926 (500 copies).
8. 69 correction slips to Forest Map Catalogue (10,350 copies).
9. Forest Map Office Record book (50 copies).
10. Professional forms (129,873 copies).
11. Miscellaneous (131,009 copies).

## (d) In Hand at Dehra Dūn.

1. *Records of the Survey of India, Vol. XIX. The Magnetic Survey of India.*
2. *Records of the Survey of India, Vol. XXI. (1) Air Survey in the Irrawaddy delta by Major C. G. Lewis, R.E., and (2) Narrative Report of Bhutān and South Tibet Survey Detachment by Captain H. R. C. Meade, I.A.*
3. *Government of India and Circular Orders (Administrative) from January 1919 to 31st December 1924.*
4. *Professional Paper No. 20—Reconnaissance Survey from Aircraft by Lt. Colonel G. A. Beuzeley, D.S.O., R.E.*
5. *Auxiliary Tables Part I. Fifth edition (reprint).*
6. *The Tides—Part V of the Hand-book of Trigonometrical Instructions.*
7. *Levelling of Precision—Part VI of the Hand-book of Trigonometrical Instructions.*
8. *Levelling Pamphlet 44 (revised and extended). Addenda to Pamphlets 41 & 46.*
9. *Wazīristān Air Survey.*
10. *List of Cantonments and Military Stations.*

Table III.—Publication of modern topographical maps.

Years of publication.	NUMBER OF SHEETS PUBLISHED.		
	One inch sheets.	Half inch sheets.	Quarter inch or Degree sheets.
1926-28 ... ..	127	69	27
Previous years ... ..	2,157	540	125
<b>Total published</b> ...	<b>2,284</b>	<b>609</b>	<b>152</b>
<b>Number of sheets in India</b> ...	<b>6,218</b>	<b>1,630</b>	<b>450</b>

**8. Map issues.**—The following tables show the number of maps issued during the year.

Table IV (a).—Map issues, Calcutta.

	ON BOOK TRANSFER (TO GOVERNMENT OFFICIALS).		ON CASH PAYMENT.		FREE ISSUES.		TOTAL.	
	Number of copies.	Value. Rs.	Number of copies.	Value. Rs.	Number of copies.	Value. Rs.	Number of copies.	Value. Rs.
Departmental.	61,347	87,673	63,869	91,556	29,551	48,639	154,767	2,27,868
Extra-departmental.	898,378	84,727	68,982	26,659	2,761	3,147	970,121	1,14,533
<b>Total</b> ...	<b>959,725</b>	<b>1,72,400</b>	<b>132,851</b>	<b>118,215</b>	<b>32,312</b>	<b>51,786</b>	<b>1,124,888</b>	<b>3,42,401</b>

Table IV (b).—Map issues, Dehra Dūn &amp; Circles.

BRANCH OR CIRCLE.	ON BOOK TRANSFER (TO GOVERNMENT OFFICIALS).		ON CASH PAYMENT.		FREE ISSUES.		TOTAL..	
	Number of copies.	Value. Rs.	Number of copies.	Value. Rs.	Number of copies.	Value. Rs.	Number of copies.	Value. Rs.
Dehra { (F. M. O.).	14,290	13,798	2,183	3,425	4,545	8,519	21,018	25,742
Dūn { No. 2 D. O.	1,540	2,281	1,018	2,040	3,706	10,478	6,264	14,794
Central Circle ...	.....	.....	164	817	.....	.....	164	817
Southern Circle...	426	813	1,989	3,244	.....	.....	2,365	4,057
Eastern Circle ...	.....	.....	183	271	.....	.....	183	271
Burma Circle ...	.....	.....	57	154	.....	.....	57	154
<b>Total</b> ...	<b>16,256</b>	<b>16,892</b>	<b>5,494</b>	<b>9,451</b>	<b>8,251</b>	<b>18,992</b>	<b>30,001</b>	<b>45,335</b>

**9. Map Record and Issue Office, Calcutta.**—During the year under review, the issues of departmental publications on book debit to government officials were less than those for recent years; other issues were generally the same. The decrease is mainly due to the fact that from 1921 to 1925 large new issues were made to the Army for mobilization purposes, as their old stocks were out of date; this demand has now practically ceased.

Sales to the general public have remained much the same, but the number of demands and enquiries has increased by over one thousand and is now 11,500. The publication of modern surveys in the neighbourhood of Bombay should lead to increases; especially if a suitable selling agency is established there.

The total number of shelves constructed to date in the map store-rooms is 6,750, as against about 10,000 required for the full survey programme, as at present foreseen.

In the "original" record room an additional 40 shelves were completed, bringing the total to 600. These will accomodate nearly all the fair originals of the present survey programme.

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### III.—WORK OF DRAWING OFFICES.

10. Tables V, VI, & VII, give an abstract of new maps completed for publication and in hand during the year, for the whole department. These are followed by general remarks about certain offices, which show such additional work as preparing old maps for reprints, correcting office copies, extra-departmental work, etc.

**Table V.—Topographical maps.**

	2 inches = 1 mile and over.		1 inch = 1 mile.		$\frac{1}{2}$ inch = 1 mile.		$\frac{1}{4}$ inch = 1 mile, Political.		$\frac{1}{8}$ inch = 1 mile.	
No. 1. Drawing Office ...	...	...	18*	6*	...	12	3	1	...	...
No. 2 Drawing Office ...	...	...	...	...	...	...	5	15	5	...
No. 6 Drawing Office ...	...	...	...	...	1	...	20	3	...	...
No. 3 Drawing Office ...	...	...	2	1	8	9	3	11	...	...
Northern Circle parties...	...	...	21	...	7	1	...	...	...	...
No. 4 Drawing Office ...	...	...	...	...	5	13	2	7	...	...
Southern Circle parties...	...	...	56	13	3	3	...	...	...	...
No. 5 Drawing Office ...	...	...	...	1	8	2	2	7	...	...
Eastern Circle parties ...	13	...	17	...	5	...	...	...	...	...
No. 7 Drawing Office ...	...	...	...	...	8	4	6	4	...	...
Burma Circle parties ...	32	1	27	...	...	...	...	...	...	...
TOTAL ...	45	1	141	21	45	44	41	48	5	...
Total to date ...	.....	.....	2,334	...	593	...	171	...	.....	.....
Total for India ..	.....	.....	6,218	...	1,630	...	450	...	.....	.....

NOTE.—Figures in italics denote work in hand.

\* Preliminary editions.

**Table VI.—Geographical maps on the 1/M and 1/2M scales.**

Map.	No. 1 Drawing Office.		No. 2 Drawing Office.		No. 6 Drawing Office.		Total.		Total to date.	Total for series.
1/2 M ...	...	5	...	1	...	...	...	6	8	22
1/M heliozincographed ...	...	...	1	3	1	1	2	4	70	104
„ engraved ...	2	9	...	...	...	...	2	9	20	.....
„ Carte Internationale	3	6	...	...	...	...	3	6	13	41

1/M means  $\frac{1}{1,000,000}$  or 1·014 inches to 16 miles.

1/2M „  $\frac{1}{2,000,000}$  or 1·014 inches to 32 miles.

Table VII.—General and special maps.

		Scale.	Completed.	In hand.
<b>No. 1 Drawing Office.</b>				
Railway map of India	...	1:4,250,000	1	...
India and Adjacent Countries	...	1:4,000,000	1*	...
Do. do.	...	1 inch = 50 miles	1	...
Motor road map of India	...	1 inch = 32 "	...	1†
Hill shading sheets	...	Various	179	11
Minute mesh originals	...	Various	525	2
Miscellaneous maps	...	Various	86†	...
<b>No. 2 Drawing Office.</b>				
Triangulation charts	...	1 inch = 4 miles	22	11
Hill shading sheets	...	Various	7	...
Sutlej Valley contour charts	...	4 inches = 1 mile	480	...
Do. re-contoured sheets	...	do.	255	55
Minute mesh originals	...	Various	16	...
Cantonment plans, new surveys from No. 20 Party prepared for publication.	...	Various, 6 inches to 64 inches = 1 mile.	61	...
Miscellaneous maps and charts	...	Various	121	4
<b>Forest Map Office.</b>				
Forest editions of 1-inch maps	...	2 inches = 1 mile	3	...
Working plan maps	...	Various	10	...
Miscellaneous maps and diagrams	...	do.	35	...
Original mapping from special surveys	...	4 & 2 inches = 1 mile	20	...
Fair originals received and completed for publication.	...	8, 4, 3 & 2 inches = 1 mile	48	...
<b>No. 3 Drawing Office.</b>				
Allahābād Guide Map	...	6 inches = 1 mile	2	...
Lahore Guide Map	...	4 inches = 1 mile	...	2
Lahore and Environs	...	1 inch = 330 feet	...	6
Lahore (densely populated area)	...	1 inch = 100 "	...	10
<b>No. 4 Drawing Office.</b>				
Bangalore Guide Map	...	1:20,000	1	...
Pachmarhi Guide Map	...	6 inches = 1 mile	1	...
Seringapatam Guide Map	...	1:20,000	...	1
<b>No. 5 Drawing Office.</b>				
Shillong Guide Map	...	6 inches = 1 mile	1	...
<b>(No. 12 Party) 10-mile Mapping Section.</b>				
Ten mile guide maps	...	1 inch = 10 miles	6	12
<b>No. 6 Drawing Office.</b>				
Simla Guide Map	...	8 inches = 1 mile	1	...
Miscellaneous maps and plans	...	Various	5	...
<b>No. 7 Drawing Office.</b>				
		.....	Nil.	Nil.

\* Publication suspended.

† in 7 Sections.

‡ includes 3 province maps.

**New editions and miscellaneous work.**

**11. No. 1 Drawing Office.**—In addition to the work shown in Tables V, VI and VII, the following work was also carried out:—

(a) *Re-issues.* Sheets corrected and brought up to date for new editions or reprints:—

	Completed.	In hand.
Carte Internationale, scale 1/M ... ..	.....	7
Southern Asia series, scale 1/2M ... ..	1	.....
India and Adjacent Countries series, scale 1/M		
Engraved editions ... ..	10	1
Helió editions ... ..	7	1
One inch sheets, old style (15' × 30')	19	5
"    "    modern ... ..	96	2
Half inch sheets ... ..	14	.....
Quarter inch sheets, provisional ... ..	68	.....
"    "    "    modern ... ..	14	1
Province maps, 1/M scale ... ..	1	.....
Railway maps (various) ... ..	2	.....

(b) *Miscellaneous work.*

Originals corrected against press order proofs ...	203	sheets.
Additions and corrections entered on "office copies" ...	3,435	"
Office copies prepared of newly published sheets ...	588	"
Area statements (by districts) of newly published sheets,		
checked and entered in area register ... ..	205	"
Mosaics prepared ... ..	81	"

**12. No. 2 Drawing Office.**—In addition to the work shown in Tables V to VII, the following work was carried out:—

	Completed.	In hand.
M. E. S. corrections incorporated in cantonment plans ... ..	248	93
Cantonment plans corrected for reprint ... ..	69	2
Colour guides prepared for cantonment and other maps ... ..	149	8
Mosaics ... ..	3	.....
Sheets mounted for indents and office use ... ..	662	.....

Special compilations of 1/M sheets 109 and 110 were completed for the 1/2M Yunnan sheet. It is not proposed to publish either of the above sheets in the 1/M series at present.

Contour charts on the scale 4 inches = 1 mile, with contours at one foot vertical interval, of the Sutlej Valley irrigation scheme area (Punjab) were prepared from spot heights obtained by levelling executed during seasons 1924-26. In the British irrigation circles in which four-inch detail survey has been carried out, the contouring was corrected to

fit topographical features, such as depressions and knolls, and combined black and brown prints of the detail survey and corrected contour sheets were then printed. In the Bahawalpur State area, in which no detail survey has been done, the contours are based on spot heights only.

The Dehra Guide Map in two sheets, on the scale of 4 inches = 1 mile, for reduction to 1/20,000 in one sheet, is in hand, the material being taken from 6 inches = 1 mile surveys carried out in 1924-26, by the Survey Training Class.

**13. Forest Map Office.**—The following work has been carried out in addition to that shown in Table VII:—

Maps prepared for reprint	...	...	...	44
Office copies of maps prepared	...	...	...	105
Office copies corrected from notifications	...	...	...	145
Sheets coloured for indents and office copies	...	...	...	1,116
Sheets mounted for indents and office copies	...	...	...	2,628
Forest information entered on maps for other survey offices				82

The strength of the office was again reduced during the year. The supervising staff now consists of one Class II and one Upper Subordinate officer, while the Lower Subordinate staff consists of 14 draftsmen, 3 colourists and 2 clerks.

The stock taking and registering of all maps, which was started in August, is nearing completion. The indexing of all original maps and plans, which was started in July, is also nearing completion.

**14. No. 3 Drawing Office.**—In addition to the work shown in Tables V and VII, the following work was carried out:—

	Completed.	In hand.
Colour patterns and press order proofs	... 49	8
Office copies corrected for reprint	... 67	.....
Compilation of topographical triangulation falling in degree sheets	... 5	5
Index traces showing limits of topographical triangulation and traverse falling in degree sheets	2	.....

There are 4 half inch sheet areas, of which the component one inch sheets have been fair mapped, but not yet published, and 5 such sheet areas, of which the component one inch sheets have been surveyed, but not yet fair mapped.

There are 3 quarter inch sheet areas, of which the component half inch sheets have been fair mapped, but not yet published, and 3 such sheet areas, of which the component one inch and half inch sheets have been surveyed, but not yet fair mapped.

During the year Rs. 163 were realized on account of charges for copying triangulation and traverse data.

**15. No. 4 Drawing Office.**—*New editions*—Originals of one sheet were corrected. Originals of one sheet have to be re-drawn; the work is in hand.

In addition, corrections on No. 4 D. O. office copies were entered on to those of No. 1 D. O. (8 sheets).

*Colour patterns.*—Were prepared for 76 sheets, and those for 11 sheets, prints for which were received before 1st April 1926, are in hand.

*Shaded originals.*—Were prepared for 61 sheets. There are none in hand. From 1st January 1926, shaded originals of Southern Circle sheets have been prepared in No. 1 Drawing Office, Calcutta.

*Miscellaneous work.*—Adjusted traces were prepared on scale  $1\frac{1}{2}$  inches = 1 mile from the 4 inch Mysore-South Kanara boundary settlement survey, which has lately been completed: these adjusted traces are intended for the correction of fair sheets of the 1 inch sheets concerned.

*Triangulation charts and computations.*—One triangulation pamphlet, with chart and topographical data, was prepared in draft form, and is ready for fair copying and despatch to the Director, Geodetic Branch; the preparation of another similar pamphlet is in hand.

Material was extracted from computation volumes and supplied to parties etc.

**16. No. 5 Party.**—Completed the drawing of an area of 66 square miles, on the scale 2 inches = 1 mile for the Seoni Court of Wards, and a Field Firing Map, scale 16 inches = 1 mile, for the Small Arms School, Pachmarhi.

**17. No. 5 Drawing Office.**—In addition to the work shown in Tables V and VII, the following work was carried out:—

	Completed.	In hand.
Hill shaded originals, scale 6 inches = 1 mile ...	1	.....
Hill shaded originals, 10 mile mapping ...	1	.....
Colour patterns and press order proofs ...	53	4
Layer guides ... ..	1	.....
Office copies of maps prepared ... ..	82	.....
Office copies corrected according to notifications	197	.....
Sheets mounted for office copies ... ..	84	.....
Compilation of topographical triangulation falling in degree sheets ... ..	3	11

Material for 4 half inch sheets is in hand, but the mapping has not been commenced for want of draftsmen; 6 half inch sheets, whose component one inch sheets are published or under publication, as well as

one quarter inch sheet, whose component half inch sheets are published or under publication, are also available for mapping.

A pupil surveyor class was started and instruction given in drawing and hand printing. Several draftsmen were temporarily transferred during the year to help in the 10 mile mapping section.

**18. No. 12 Party.**—*Ten mile Mapping section.* Work of this section was continued on these maps throughout the year and the following sheets were submitted for publication *viz.*:—Tezpur, Sylhet, Shillong, Calcutta, Chittagong, and Krishnagar.

It was decided to concentrate during the year under report on the sheets east of longitude 88°, the following six sheets west of this, which had been started, being held in abeyance *viz.*:—GAYĀ, RĀNCHĪ, CHAIBĀSA, PURNEA, BHĀGALPUR and MIDNAPORE. East of longitude 88°, the following 12 sheets are in hand and it is hoped to complete the drawing of these by the end of October 1926, *viz.*:—Darjeeling, Jalpaiguri, Bogra, Bhutān, Dacca, Balipāra, Silchar, Lushai Hills, Chittagong Hill Tracts, Dibrugarh, Nāgā Hills, and Upper Chindwin.

The colour guides of one sheet (TEZPUR) have been completed and submitted.

**19. Sadiya Frontier Detachment.**—This detachment completed the drawing of 13 Tea Garden maps on the scale of 20 inches = 1 mile.

**20. No. 6 Drawing Office.**—In addition to the work in Tables V, VI and VII, the following work was also carried out:—

1. Examination of proofs and preparation of colour guides.

				Completed.	In hand.
1/M sheets	...	...	...	1	.....
$\frac{1}{2}$ inch = 1 mile	...	...	...	6	.....
$\frac{1}{4}$ inch = 1 mile	...	...	...	22	.....
2 inches = 1 mile	...	...	...	.....	1

2. Rough compilations for 10 quarter inch sheets were prepared and the compilations of 3 1/M sheets begun.
3. Corrections on 1 quarter inch sheet were carried out and sent for publication, and corrections on 4 one inch sheets are in hand.
4. Two extra-departmental maps were drawn, *viz.*, Manzai Area, 2 inches = 1 mile, and Darel and Tangir, 1 inch = 12 miles.

The *Survey section* has been employed on the compilation and fair-drawing of trans-frontier maps on the scales 1:1,000,000 and  $\frac{1}{2}$  inch and  $\frac{1}{4}$  inch = 1 mile.

The *Army section* is employed on the preparation and printing of maps and plans for the Army and other government departments.

During the year 369 maps and plans were dealt with, and 27,690 copies were printed from the presses.

Courses in map drawing and topography were held throughout the period, 7 non-commissioned officers being instructed and passed by Lieutenant Smith and Conductor Batt.

The work of the section for the year included :—

Miscellaneous maps and plans transferred to stone	...	...	...	369
Number of copies printed	...	...	...	27,690
„ „ pulls	...	...	...	40,994
„ „ impressions, type press	...	...	...	10,695

**21. No. 7 Drawing Office.**—In addition to the work shewn in Table V, the following work was carried out :—

(a) Colour patterns and press order proofs.

			Completed.	In hand.
Topographical sheets	...	...	54	10
Special forest sheets	...	...	19	19

(b) 6 sheets of the Yenangyaung Oil Field Survey, scale 24 inches = 1 mile, each sheet 28 inches by 40 inches, are in hand comprising :—

3 sheets for an engineering edition without contours, and  
3 sheets for a geological edition with 10-foot spirit levelled contours.

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#### IV.—PRINTING AND MISCELLANEOUS.

**22. The Photo.-Litho. Office, Calcutta.** The following tables show the cost and out-turn of the Photo.-Litho. Office and the independent out-turn of the photo. branch in process work and of the type section in letterpress work.

As explained in last year's report, the cost of the office now includes the cost of stores obtained from England, the value of which was about Rs. 2 lakhs, so that the cost of the office compares very favourably with previous years. The value of out-turn, owing to the alteration in cost rates, as explained in last year's report, is not comparable with previous years.

The out-turn however is a record as regards the number of negatives prepared and the number of departmental sheets published, while the number of impressions pulled has only been exceeded twice. It is the number of sheets published that really shows the amount of work done, as the number of impressions is governed by the length of the run of each sheet, and, once a sheet is in the machine, the difference in the amount of work in printing a long run instead of a short one is negligible, compared to the work of preparing the plates.

The year was marked by the large demand for reprints and new editions, consequent on requirements by the military authorities.

A new rotary offset printing machine was installed during the year. Though this type of machine is the one installed in most up-to-date printing works at home, local conditions, such as the number of direct plates already prepared and the smallness of the editions of our maps, rather militate against its usefulness in these offices. When installing new machinery in the future, it will be better to return to the direct flat bed type of machine.

#### COST AND OUT-TURN OF PHOTO.-LITHO. OFFICE.

Expenditure.	Value of out-turn at office rates.	Negatives prepared.	Zinc plates prepared.	MAPS PRINTED.		Impressions pulled.
				Departmental.	Extra-departmental.	
<b>Rs.</b> <b>4,63,057</b>	<b>Rs.</b> <b>5,23,336</b>	<b>Collodion</b> <b>5,071</b> <b>Powder</b> <b>2,695</b> <b>7,766</b>	<b>7,757</b>	<b>1,226</b>	<b>2,440</b>	<b>4,134,285</b>



OUT-TURNS OF PHOTO. BRANCH AND TYPE LETTERPRESS  
PRINTING SECTION.

PHOTO. BRANCH.					TYPE LETTERPRESS PRINTING SECTION.		
HALF-TONE WORK.		LINE WORK.		PHOTO- GRAVURES.	Items or pages published.	Copies printed.	Impressions pulled.
Blocks prepared.	Impres- sions pulled.	Blocks prepared.	Impres- sions pulled.	Plates prepared.			
413	213,462	107	250,082	11	2,256	1,239,905	2,000,846

**23. Engraving Office, Calcutta.** This office is under the charge of the Officer in Charge, No. 1 Drawing Office, and is divided into two sections.—(a) Engraving, (b) Copper-plate printing.

(a) *Engraving.*—During the year under report, 4 sheets of the India and Adjacent Countries series, scale 1:1,000,000; 3 sheets of 'La Carte Internationale du Monde', scale 1:1,000,000; and 2 sheets of the Southern Asia series, scale 1:2,000,000, have been completed and sent for publication.

Corrections have also been carried out on the plates of 8 already published sheets for issue of new editions.

(b) *Copper-plate printing.*—The out-turn of this section was 12,097 impressions, which includes both departmental (80%) and extra-departmental work (20%). Of the departmental work 40% consisted of scales, 30% miscellaneous, including art paper prints, transfers &c., and 30% photogravure impressions from plates prepared by the Photo.-Litho. Office.

**24. No. 16 Party (Publication and Stores) Dehra Dūn** was constituted as a separate charge from the 21st October 1925. It consists of a photo.-zinco section, a letterpress printing section, and a stores and workshops section.

*Photo-zinco section.*—The following maps and plans were reproduced by this section:—

Cantonment maps, forest maps, triangulation charts, miscellaneous maps, charts and plans, plane-table sections, and extra-departmental maps.

*Letterpress printing section*—This section carried out the publications shown in Table II(c) and II(d).

*Stores and workshops section.*—This section executed all petty construction and repairs of buildings, local purchases and maintenance of technical and camp stores for all parties and offices of the Geodetic Branch. It also received and despatched maps and parcels and made packing cases for all sections of the Geodetic Branch.

**25. No. 4 Drawing Office, Bangalore.** The Vandyke press did the following photo-zinco work:—

Reproductions	...	...	...	...	222
Enlargements	...	...	...	...	230
Reductions	...	...	...	...	257
Vandyke plates prepared	...	...	...	...	180
Prints pulled	...	...	...	...	10,802

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## V.—MATHEMATICAL INSTRUMENT OFFICE.

26. During the year from 1st April 1925 to 31st March 1926, the demands on this office for supply and repair of instruments show an increase, compared with the previous years (*vide* items 1 and 2 in the statement below).

	1923-24.	1924-25.	1925-26.
	Rs.	Rs.	Rs.
1. Total value of stores issued, as shown in the Profit and Loss statements.	4,46,559	3,75,024	4,20,340
2. Value of repairs to instruments received for repairs, and returned in serviceable condition.	1,56,682	1,28,931	1,34,008
3. Value of instruments received, as no longer required.	54,824	51,875	51,045
4. Book value of the stock of instruments, &c., in the Serviceable Store.	5,14,985	3,25,685	2,55,474
5. Book value of the stock of instruments, &c., in the Repairable Store.	1,11,113	1,04,859	81,527
6. Total value of work done in the workshop.	3,92,072	3,82,467	4,31,269
7. Value of instruments manufactured in the workshop for Serviceable Store.	1,14,677	1,42,616	1,75,874
8. Value of instruments purchased locally.	13,034	35,356	43,326
9. Value of instruments and materials obtained from England through the Director General, India Store Department.	1,47,723	95,750	92,003
10. Average number of employees and their pay including pension contribution.	No. 402 Rs. 1,57,280	No. 386 Rs. 1,52,166	No. 412 Rs. 1,60,659

27. Since 1st April 1925, the quasi-commercial departments of government are, in accordance with the orders of the Government of India, Department of Education, Health and Lands, being uniformly treated with the public service departments, in respect of the charges for supplies and repairs

The system of fixing the book value and issue value of the instruments and the charges for repair having been altered by the Government of India, the M. I. O. account rules, the rules and regulations regarding supply, and the price list, have been revised. The latter two are being distributed to the various departments and offices who deal with the M. I. O.

Obsolescent stores in the M. I. O. to the value of Rs. 23,875 were separated from the Serviceable and Repairable Stores, and for these a separate account, called the "Dump or suspense account", is being maintained. Obsolescent and condemned stores to the value of Rs. 4,126 have been disposed of to the best advantage of Government.

The stock taking of the Serviceable, Repairable and Material Stores was carried out twice yearly, as usual, and the discrepancies found were duly adjusted. A very satisfactory audit report was received for the year 1924-25.

28. During the year under review various experiments for the improvement of apparatus were undertaken, and a new design of mechanical microscope stage, specially manufactured for the Tropical School of Medicine, received a very favourable report. A special form of microscope for the examination of skin diseases was designed and manufactured. It proved very successful and further experimental work is being conducted towards enlarging the field of view, consistently with increased magnification. In the glass blowing department, several special forms of thermometers were manufactured to the design of the Ordnance and other departments.

The repairs of optical instruments for the Army continued to increase during the year, and, in addition, the office prepared twelve rangefinders, with special designs of centre prism combinations, for a comparative durability test, to be conducted under the varying climatic conditions of India. These were distributed to various provinces and the experiment is still under progress.

A number of consultations were held during the year with the representative of the Inspector Guns and Rifles, Ishapore, in connection with the standardisation of components of dial sights, and a satisfactory conclusion was reached regarding their manufacture and distribution.

The M. I. O. was also asked to advise regarding the design of graduated jars for revenue purposes in Bihar and Orissa, and a suitable standard design for supply to the districts was evolved, in collaboration with the Chief Commissioner of Excise and Salt. These are to be certified and marked by the office before issue.

An experimental staff was made similar to that used by the Director of Surveys, Palestine, but to read in yards instead of metres. This staff is designed to read horizontally for tacheometric observations, with the object of eliminating errors due to atmospheric refraction variations at different heights from the ground and to provide impersonal observations. The above is now undergoing a field test.

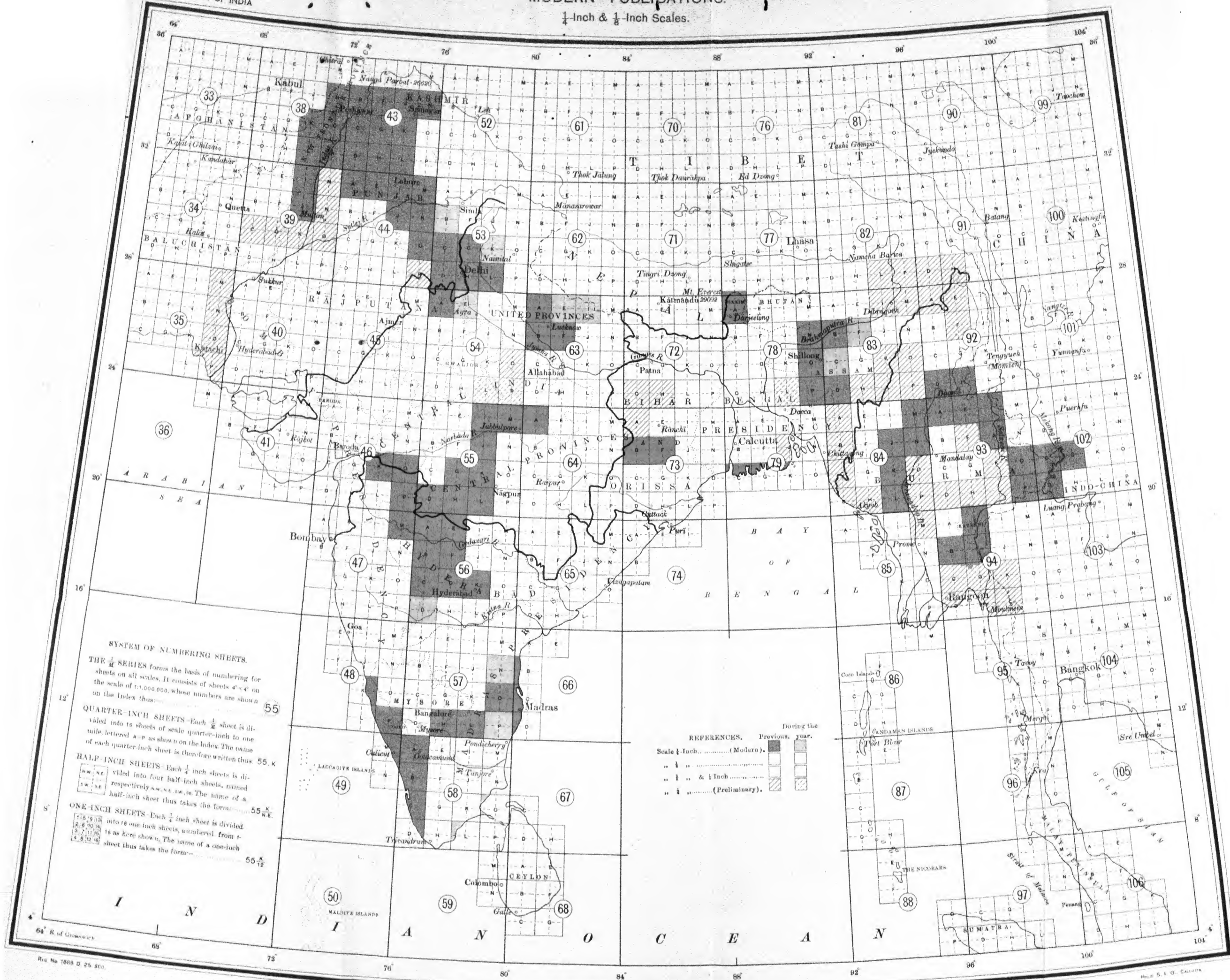
29. The manufacture of rules, scales, curves, drawing instruments, and spirit levels, showed a considerable increase, and a large quantity of army protractors were supplied, the conversion of band chains was increased, and a special form of sun dial, and five standard yards made. In addition to the above, 12 special theodolites, 3 quintants and numerous smaller instruments were manufactured.

Over 100 microscopes were repaired for the medical department, and about 50 of them fitted with new substages and triple nosepieces, entirely manufactured in the works.

The office dealt with more than 1,500 offices of the Imperial and Provincial Governments and about 200 district boards, municipalities and Indian states.

30. The title of Rai Sahib was conferred, in June 1925, upon Mr. Shashi Bhushan Mitra, the head supervisor of the workshop, for meritorious service.

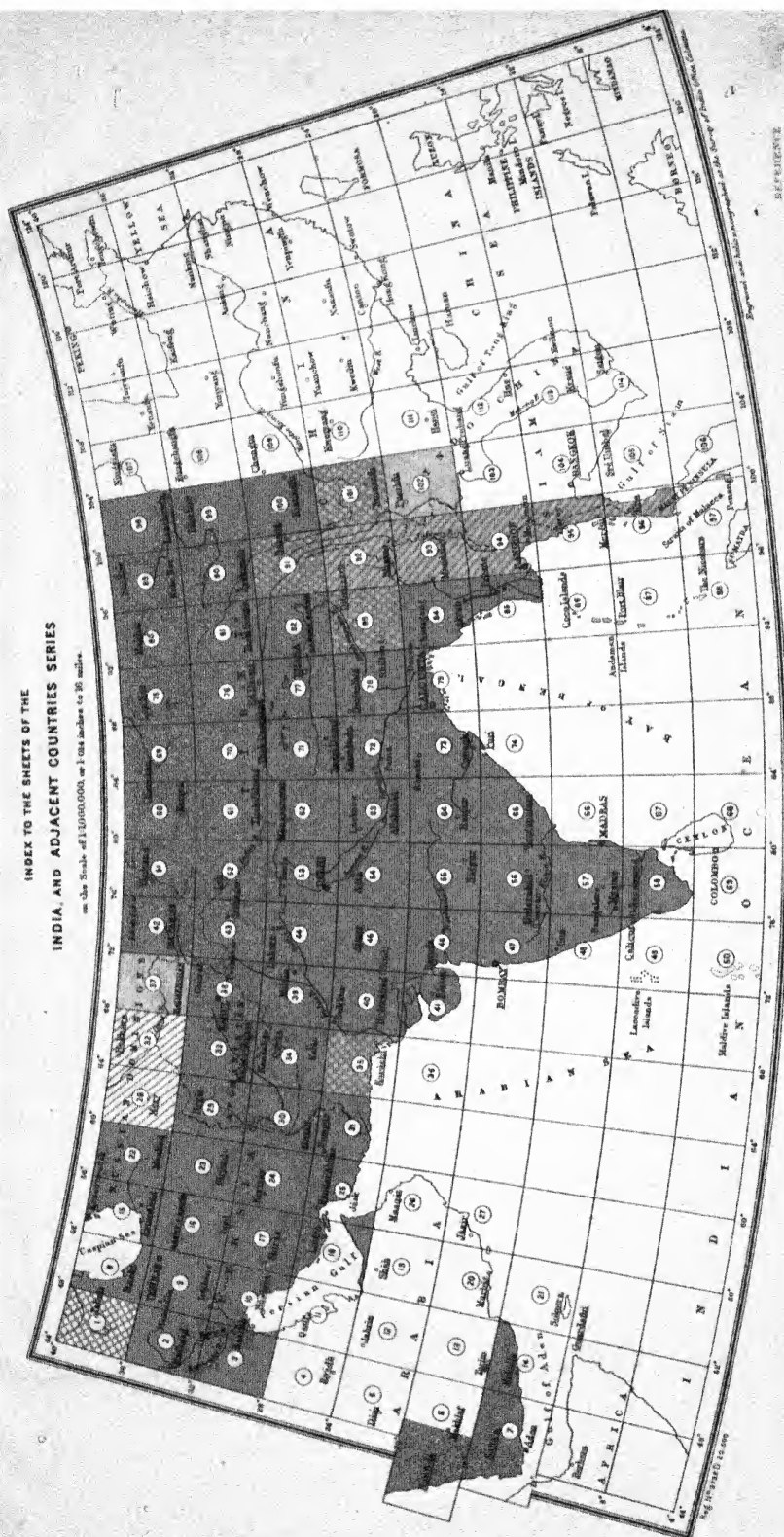
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# INDEX TO THE SHEETS OF THE INDIA, AND ADJACENT COUNTRIES SERIES

on the Scale of 1:10,000,000, or 1 inch to 30 miles



## NOTE.

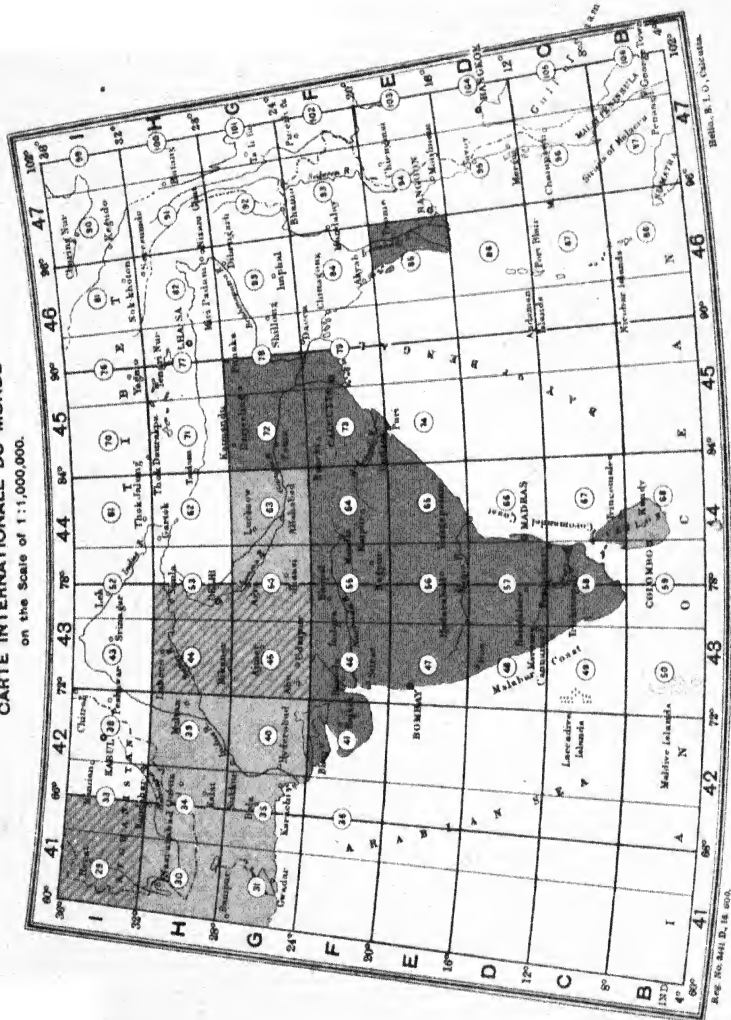
The names underlined on this Index are the title names of the sheets, and their numbers are given in column 3. Sheets 25 and 26, 27 and 28, are published respectively as combined sheets.

Scale: 1 inch = 30 miles  
1:10,000,000

## REFERENCE

- For information this Index is for the year 1911.
- Names published without underlines are of general importance.
- Names published with underlines are of special importance.
- Names published with underlines and in italics are of special importance.
- Names published with underlines and in bold type are of special importance.
- Names published with underlines and in bold type and italics are of special importance.

INDEX TO THE SHEETS OF THE  
CARTE INTERNATIONALE DU MONDE  
on the Scale of 1:1,000,000.



EXPLANATION.

The thick lines show the margins of the sheets of the International Map of the World, Scale 1:1,000,000. Each sheet is designated by the letter N (Northern hemisphere), followed by the marginal letter and number corresponding to its position, e.g., the sheet which includes Bombay is N.E.45.

The figures in circles are the numbers of the sheets of the India and Adjacent Countries Series on the Scale of 1:1,000,000.

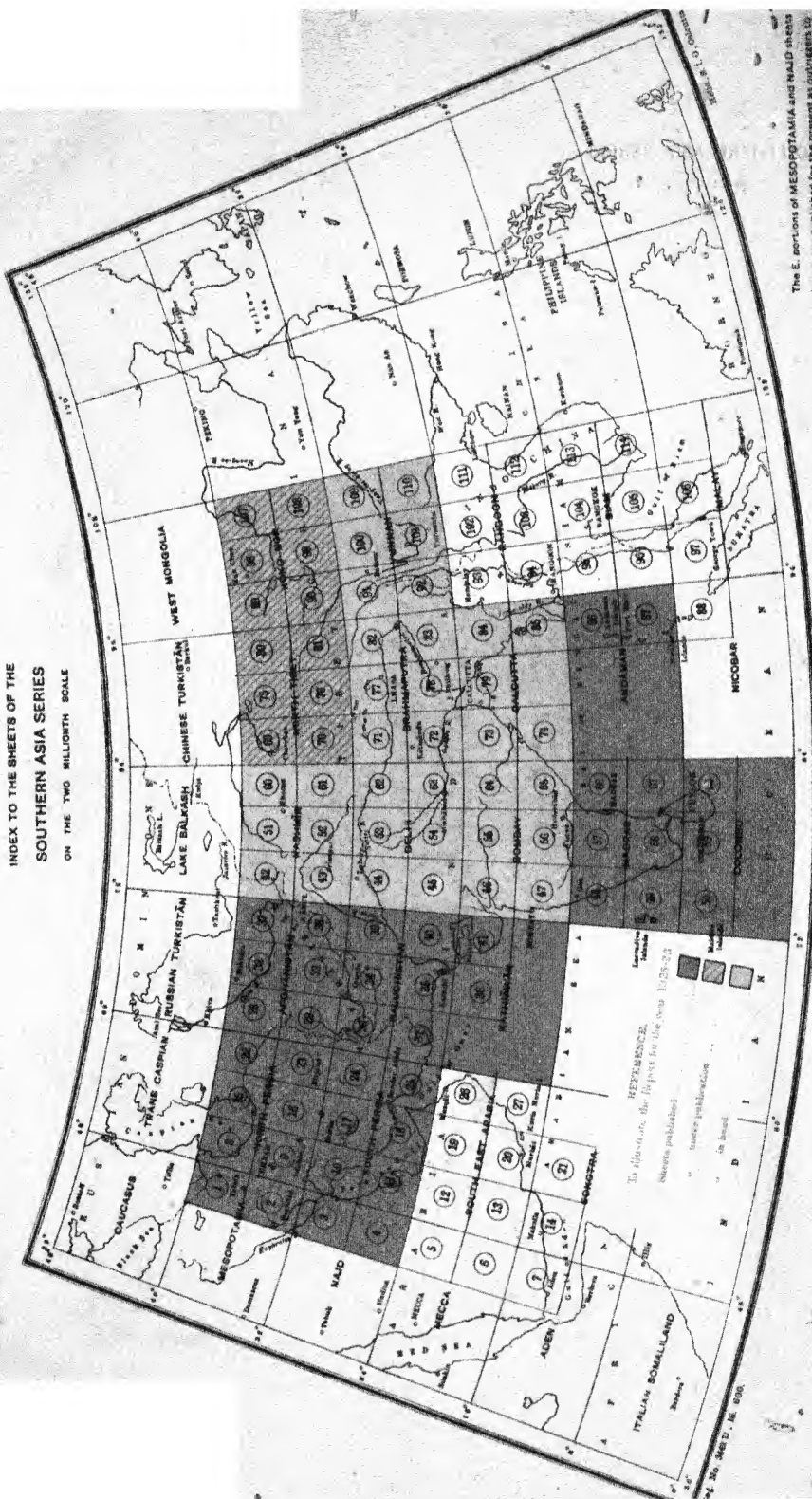
Scale: 1:1,000,000  
Miles 0 100 200  
Kilometers 0 100 200

REFERENCE.

Revised published  
under publication  
in hand  
The illustration was prepared for the year 1929-30



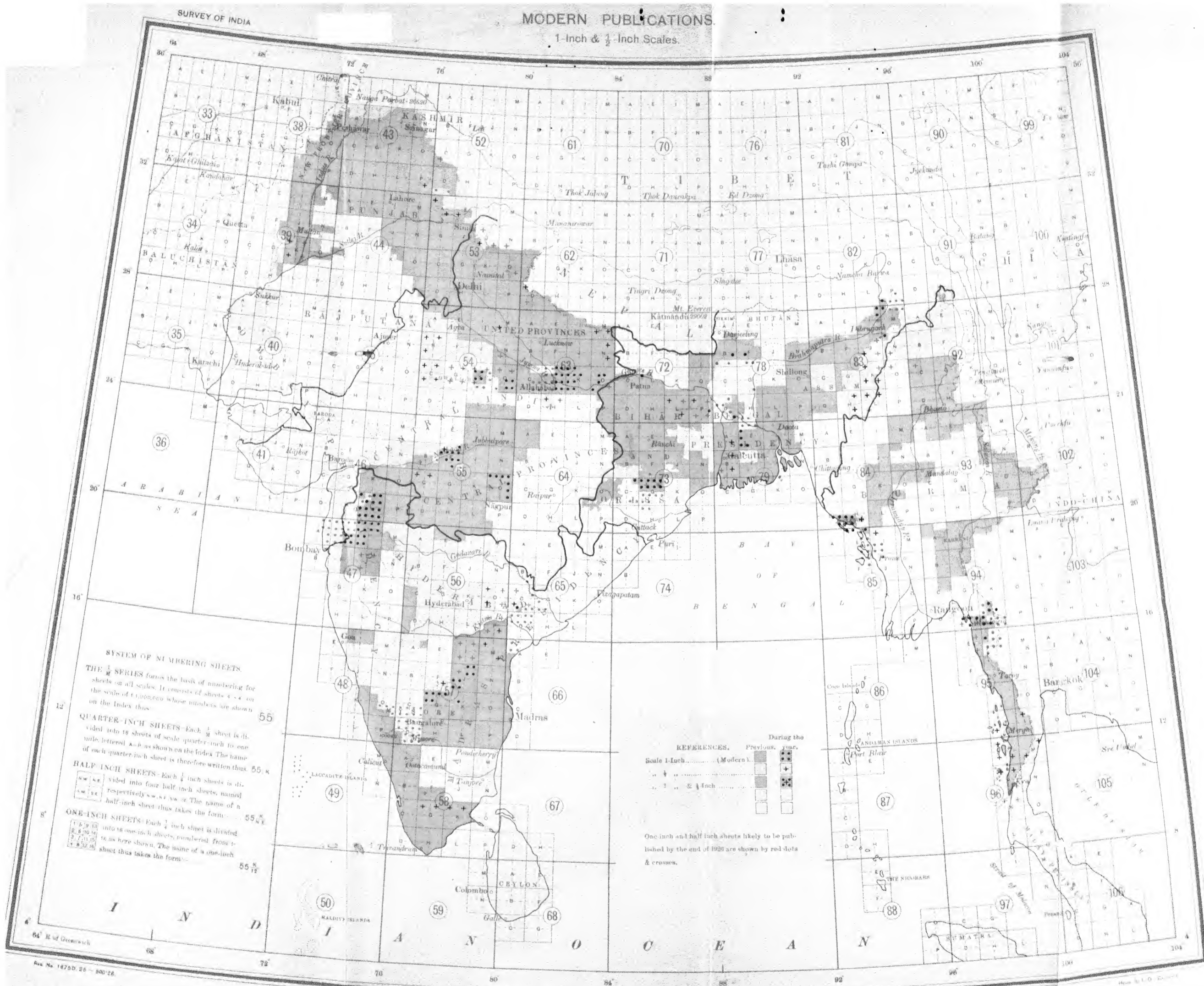
INDEX TO THE SHEETS OF THE  
SOUTHERN ASIA SERIES  
ON THE TWO MILLION SCALE



The E. portions of MESOPOTAMIA and NAJD sheets  
have been furnished for the present as OUTRIGGED to  
N. & S. PEIRIA sheets respectively.

REFERENCE:  
To illustrate the layout for the new 1:250,000  
sheets published  
by the Survey of India  
in 1901.

Scale 1:2,000,000  
1 inch = 100 miles  
1 centimeter = 1000 meters



SYSTEM OF NUMBERING SHEETS.

THE  $\frac{1}{4}$  SERIES forms the basis of numbering for sheets on all scales. It consists of sheets 4 x 4 on the scale of 1:1,000,000 whose numbers are shown on the Index thus:

QUARTER-INCH SHEETS—Each  $\frac{1}{4}$  sheet is divided into 16 sheets of scale quarter-inch to one mile, lettered A-P as shown on the Index. The name of each quarter-inch sheet is therefore written thus: 55 K.

HALF-INCH SHEETS—Each  $\frac{1}{4}$  inch sheet is divided into four half-inch sheets, named respectively NW, NE, SW, SE. The name of a half-inch sheet thus takes the form: 55 K NE.

ONE-INCH SHEETS—Each  $\frac{1}{4}$  inch sheet is divided into 16 one-inch sheets, numbered from 1 to 16 as here shown. The name of a one-inch sheet thus takes the form: 55 K NE 1.

REFERENCES.

	Previous years.	During the year.
Scale 1-Inch.....	(Modern)	
" 1/2-Inch.....		
" 1/4-Inch.....		

One inch and half inch sheets likely to be published by the end of 1929 are shown by red dots & crosses.















